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Appl. No. 10/549,987
Response Date: February 17, 2009
Office Action Date: November 17, 2008

• • • R E M A R K S / A R G U M E N T S • • •

The Office Action of November 17, 2008 has been thoroughly studied. Accordingly, the changes presented herein for the application, considered together with the following remarks, are believed to be sufficient to place the application into condition for allowance.

By the present amendment, the limitations of claim 9 have been incorporated into independent claim 1. In addition claim 1 has been amended to recite that the preliposomes contain CoQ₁₀ at a concentration of 3 (w/v) to 40%(w/w). Support for this lower limit is found in applicants' Example 2. The higher limit is found in claims 3 and 15.

Claims 3, 8, 9 and 15 have been canceled in favor of the amendments to the remaining claims.

Entry of the changes to the claims is believed to be proper after final rejection inasmuch as the amendments substantially only involve incorporation of limitations from dependent claims (now canceled) into the independent claim, so that no new issues are believed to be raised by the amendments.

Entry of the changes to the claims is respectfully requested.

Claims 1, 2, 4-7, 10-14, and 16-18 remain pending in this application.

Claims 1-8, 10 and 12-18 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,824,790 to Yatvin in view of U.S. Patent Application Publication No. 2002/0039595 to Keller and Wen-Jian Lan, et al. (Acta Scientarium Naturalium Universitatus Sunyatseni, Jan, 2004).

Claim 9 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Yatvin in

Appl. No. 10/549,987
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view of Keller and Wen-Jian Lan, et al. and further in view of U.S. Patent No. 6,261,575 to Hoppe et al.

Claim 11 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Yatvin in view of Keller and Wen-Jian Lan, et al. and further in view of Chen et al. (Journal of Pharmaceutical Sciences, 1987 and U.S. Patent No. 5,318,987 to Weithmann et al.

For the reasons set forth below it is submitted that all of the pending claims are allowable over the prior art of record and therefore, each of the outstanding prior art rejections of the claims should properly be withdrawn.

Favorable reconsideration by the Examiner is earnestly solicited.

The Examiner has relied upon Yatvin as teaching:

...pharmaceutical compositions and methods of making wherein the proliposomal compositions include and antioxidant (column 7 lines 16-35), a ceramide and cholesterol (column 7 lines 5-10). Wherein the composition is in dry granular form (column 6 lines 22-32) lyophilized and then compressed into a solid tablet is taught (column 9 lines 15-20). The presence of the cholesterol lowers the melting point of the lipid solution so that a lower temperature may be used to melt the antioxidant and lipid (ceramide) (column 10 lines 31-43). The use of lactose in the method is taught as well as dissolving the components with an organic solvent (column 7 lines 58-column 8 line 2 and column 8 lines 49-column 9 line 9).

The Examiner notes that:

Yatvin suggests that one intended use of the composition is to treat coronary artery and heart disease (column 1).

The Examiner concedes that:

Yatvin does not specifically teach including Q10 as the antioxidants or spongiamine as the ceramide

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The Examiner has relied upon Keller as teaching:

...a method of making a preliposome formulation and then dehydrating it. Biologically active materials for the preliposome formulation include nutritional supplements and antioxidants such as coenzyme Q10 (page 4 claim 5). The concentration of CoQ10 is indicated in example 2 as 1.29 % (page 3). Ceramides and sphingolipids are taught as suitable as the lipid component (page 2 para 16). Cholesterol is taught as added to the preliposome formulation (page 2 para 16). Liposomal formulations with ceramides are taught to increase bioavailability of an antioxidant which is poorly absorbed orally (page 1 para 10-page 2).

The Examiner has relied upon Wen-Jian Lan et al. as teaching:

...the discovery of two new ceramides named Spongiamine A and Spongiamine B that were isolated from the sponge *Spongia sp.* (abstract and page 3 of translation). Ceramides are taught to be the main structure for forming sphingolipids and offer advanced activity in anti-tumor, anti-virus, anti-hepatotoxi and immunization uses as well as highly effective for moisturizing (page 2 of translation). The data show that spongiamine are characterized by the classical structure of cermides (page 4 of translation).

In combining the teachings of Yatvin, Keller and Wen-Jian Lan et al. the Examiner takes the position that:

...one of ordinary skill in the art would have been motivated to include CoQ10 in the method and composition of Yatvin as the antioxidant because Keller teaches that CoQ10 is a suitable antioxidant to be used in a preliposomal formulation.

....One of ordinary skill in the art would have had a reasonable expectation of success because Yatvin teaches that preliposomes are ideally suited for lipophilic compounds and have implications for developing formulations that stabilize encapsulated drugs (page 8 para 97). The concentration of CoQ10 taught by Keller of 1.29% fall in the same ranges as claimed by Applicant.

...One of ordinary skill in the art would have been motivated to include the ceramide spongiamine in the method of Yatvin because Wen-Jian Lan et al. teach the discovery

Appl. No. 10/549,987
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of two new ceramides named Sphingiamine A and Sphingiamine B that were isolated from the sponge *Spongia sp.*

... One of ordinary skill in the art would have had a reasonable expectation of success because Wen-Jian Lan et al. teach that sphingiamine are characterized by the classic structure of ceramides (page 4 of translation) are the main structure for forming sphingolipids; and Keller teaches that sphingolipids as well as ceramides are also suitable as the lipid component of a preliposome (page 2 para 16).

The teachings of Yatvin are directed to a medical preliposome composition for the treatment of heart disease (as the Examiner has noted). The medical preliposome compositions developed by Yatvin have improved stability of the active ingredients in the small intestine and otherwise reduce the stimulation of the active ingredients to the gastrointestinal tract. The active ingredients used by Yatvin are polycyclic aromatic antioxidants or anti-inflammatory compounds.

The teachings of Keller are directed to a liposome-capsule dosage unit that is limited to 1.29 wt.% of Coenzyme Q₁₀ together with ceramides and cholesterol. The liposome-capsule dosage unit was developed for the delivery of materials with poor oral solubility and materials that are not absorbed or are poorly absorbed from the gastrointestinal tract. The liposome-capsule dosage unit can be administered orally, intra-ocularly, intranasally, rectally or vaginally.

The teachings of Hoppe are directed to a cosmetic formulation of a liposome-capsule that contains 0.05-1% CoQ₁₀ and ceramides.

Applicants' independent claim 1 is directed to CoQ₁₀-containing preliposomes for preparing cosmetic compositions which contain sphingiamine in the preliposome structures. The preliposomes contain CoQ₁₀ at a concentration of 3 (w/v) to 40% (w/w).

None of the prior art references of record suggests a preliposome that is used in a

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cosmetic composition that contains CoQ₁₀ at such a high concentration as 3 (w/v) to 40% (w/w) which, applicants have discovered, greatly improves the effect of percutaneous absorption of CoQ₁₀ in cosmetic formulations. Moreover, as shown in applicants' Example 4, the CoQ₁₀ improves the stability of the preliposomes.

The teachings of the prior art of record, properly considered in their entirety, do not lead to, suggest or render obvious applicants' claimed invention

Accordingly, applicants respectfully request favorable reconsideration and withdrawn of the outstanding rejections by the Examiner.

The Examiner's reliance upon Wen-Jian Lan et al, Chen et al. and Weithmann et al. does not address or overcome the patentable distinctions between applicants' claimed invention as noted above.

Based upon the above distinctions between the prior art relied upon by the Examiner and the present invention, and the overall teachings of prior art, properly considered as a whole, it is respectfully submitted that the Examiner cannot rely upon the prior art as required under 35 U.S.C. §103 to establish a *prima facie* case of obviousness of applicants' claimed invention.

It is, therefore, submitted that any reliance upon prior art would be improper inasmuch as the prior art does not remotely anticipate, teach, suggest or render obvious the present invention.

It is submitted that the claims, as now amended, and the discussion contained herein clearly show that the claimed invention is novel and neither anticipated nor obvious over the teachings of the prior art and the outstanding rejection of the claims should hence be withdrawn.

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Therefore, reconsideration and withdrawal of the outstanding rejection of the claims and an early allowance of the claims is believed to be in order.

It is believed that the above represents a complete response to the Official Action and reconsideration is requested.

If upon consideration of the above, the Examiner should feel that there remain outstanding issues in the present application that could be resolved; the Examiner is invited to contact applicants' patent counsel at the telephone number given below to discuss such issues.

To the extent necessary, a petition for an extension of time under 37 CFR §1.136 is hereby made. Please charge the fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 12-2136 and please credit any excess fees to such deposit account.

Respectfully submitted,



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